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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,640	12/14/2001	Hiroshi Mase	ZU-406	9733

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
GILLIAM, BARBARA LEE	
ART UNIT	**PAPER NUMBER**
1752	

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/009,640	MASE ET AL.	
	Examiner	Art Unit	
	Barbara L. Gilliam	1752	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5,9,10,12,15,17,18,20,22,23 and 25-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3,9,10,12,15,18,20,22,23,25,27-33,35-39,41 and 42* is/are rejected.

7)☒ Claim(s) *5,17,26,34 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed August 9, 2004 been received and entered in the case.

2. Claims 2-3, 5, 9-10, 12, 15, 17-18, 20, 22-23, 25-42 are pending of which claims 29-42 are new.

Claim Objections

3. Claims (9, 20, 23, 27, 31, 32), (10, 12, 22, 28, 25, 36), (38, 41-42) objected to under 37 CFR 1.75 as being a substantial duplicate of claims (2, 15, 18, 25, 29, 30), (3, 5, 17, 26, 33, 34), (37, 39-40). When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The first group claims are drawn to lithographic original plate and the second group of claims are drawn to the actual lithographic printing plate which is obtained by irradiating the original plate. Both sets of claims include process limitations. Therefore there is substantially no difference between the original plate (precursor) and the plate.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 2-3, 9-10, 15, 18, 20, 23, 25, 27, 29-33, 35, 37-39, 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Verschueren et al.

a. In US 6,230,621 B1, Verschueren et al. teach a heat sensitive material for making lithographic printing plates comprising on a lithographic support an image forming layer comprising a hydrophilic binder, a cross-linking agent for the hydrophilic binder, metal oxide particles and dispersed hydrophobic thermoplastic polymer particles (claim 1). The heat sensitive material can further comprise an IR sensitive dye or pigment as a compound capable of converting light into heat (claims 5 and 6). The heat sensitive material is image-wise exposed to heat resulting in an increase in oleophilicity of the exposed area (claim 8 & column 4, lines 53-56). The printing plates of the Examples were imaged with a thermal printer (column 8, lines 16-19) however according to Verschueren et al. the preferred method for image-wise exposure is with a laser operating in the infrared or near-infrared wavelength range of 700-1500 nm (column 5, lines 1-6). The printing plate of Verschueren et al. is processless, meaning the plate is

ready without development and can be mounted on a printing press immediately after exposure (column 5, lines 1-6). In Example 2, the image forming layer of the printing plate comprises TiO_2 as the metal oxide particles, polyvinyl alcohol as the hydrophilic binder, hydrolyzed tetramethoxysilane as the cross-linking agent, polystyrene as the hydrophobic thermoplastic particles and IR-dye of structure I as the compound capable of converting light into heat (page 6, lines 9-46). When the thermoplastic particles are subjected to a temperature above the coagulation temperature of the hydrophobic thermoplastic particles, they coagulate to form a hydrophobic agglomerate in the hydrophilic layer so that at these parts the hydrophilic layer becomes hydrophobic and oleophilic. Coagulation may result from softening or melting of the thermoplastic polymer particles under the influence of heat (column 3, lines 1-23). The image forming layer of Example 2 meets the present limitations for the photosensitive layer.

b. The Examiner asserts the image forming layer of Verschueren et al. inherently has a hydrophilic phase and hydrophobic phase because the hydrophobic components are not soluble in the hydrophilic medium. The hydrophobic polymer is added to the hydrophilic components of the image forming layer in the form of an emulsion and becomes dispersed therein (Example 2).

c. According to the current specification, there are two scenarios in which the photosensitive hydrophilic layer loses hydrophilicity and is changed to ink-receptive when exposed to a light of a wavelength of 750 to 1100 nm. In the first case the hydrophobic polymer phase is mainly foamed and in the second

case foaming hardly takes place. In first case, the gas which causes foaming is presumed to be generated when the polymerizable functional groups of the cross-linking agent contained in the hydrophobic polymer phase remain in the photosensitive layer, and these residual functional groups undergo a reaction or decomposition to thereby generate a gas. In the second case, the hydrophobic phase has thermoplasticity and the hydrophobic particles are melted by heat (page 31, line 1 – page 33, line 16). The image forming system of Verschueren et al., comprising thermoplastic particles which melt or soften upon exposure to imaging heat, is similar to the second case wherein foaming hardly takes place. Verschueren et al. is silent with respect to any gases or foam generated however the image forming layer of Verschueren et al. comprises a cross-linking agent and a hydrophilic binder in addition to the hydrophobic thermoplastic particles like the photosensitive layer of the present application. Therefore the heat-sensitive layer of Verschueren et al. is expected to foam in the same manner as the present application.

6. Claims 2, 9, 15, 18, 20, 23, 29-31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Leon et al.

a. In US 6,190,830 B1, Leon et al. teach an imaging member comprising a support having thereon a hydrophilic imaging layer comprising a hydrophilic heat-sensitive crosslinked vinyl polymer which is thermally switchable. The polymer comprises organoonium groups as repeating units (claim 1). The polymer is rendered more oleophilic upon exposure to heat

(column 3, lines 34-46) and is crosslinked by any number of ways, preferably by the reaction of an amine-containing pendant group with a difunctional or trifunctional additive (column 7, line 20 – column 8, line 3). In Example 1, heat sensitive polymer 2 was mixed with a carbon dispersion and a bis(vinylsulfonyl)methane aqueous solution (crosslinker), coated on a substrate, dried and subsequently imaged with laser having a wavelength of 830 nm (column 14, line 63 – column 15, line 22). The printing plate of Leon et al. meets the present limitations for the lithographic printing plate wherein the heat-sensitive vinyl polymer meets the present limitations for the hydrophilic polymer, the carbon dispersion meets the limitations for the light absorbing compound and the bis(vinylsulfonyl)methane aqueous dispersion meets the limitations for the cross-linking agent.

b. It is clear from the teachings of Leon et al. that a hydrophilic phase and hydrophobic phase are present in the image forming layer taught therein. The image forming layer is a hydrophilic layer containing the hydrophilic heat-sensitive polymer comprising organoonium groups. The cross-linking agent, added to the other components of the layer via aqueous dispersion, forms the hydrophobic phase (Examples). It is noted that the crosslinker of Leon et al. is not a polymer. However it is not clear if the hydrophobic phase of the present invention contains an actual polymer. See paragraph 7a.

c. According to the current specification, the gas which causes foaming is presumed to be generated when the polymerizable functional groups of the cross-linking agent contained in the hydrophobic polymer phase remain in

the photosensitive layer, and these residual functional groups undergo a reaction or decomposition to thereby generate a gas (page 32, line 19 – page 33, line 31). Leon et al. is silent with respect to any gases or foam generated however the image forming layer of Leon et al. has the same components as the photosensitive layer of the present application, specifically the cross-linking agent and the hydrophilic binder. Therefore the image forming layer of Leon et al. is expected to foam in the same manner as the present application.

7. Claims 2, 9, 15, 18, 20, 23, 29-31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Damme et al.

a. In US 6,096,471, Van Damme et al. teach a heat-sensitive imaging element for providing a lithographic printing plate, comprising a support and a heat switchable image forming top layer comprising a hardened hydrophilic binder and a heat switchable polymer wherein this layer or a layer adjacent thereto comprises a compound capable of converting light into heat. The heat switchable polymer contains aryldiazosulphonate units (claim 1), which is hydrophilic before heating and becomes hydrophobic by heating (column 4, lines 10-18). The compound capable of converting light into heat can be an infrared absorbing dye or pigment (claims 3-4). The image forming layer comprising a cross-linking agent (claim 6). In Example 2, a dispersion comprising TiO_2, a tetramethylorthosilicate emulsion in water (crosslinker), polyvinylalcohol, IR-2 (infrared dye) and the diazosulphonate copolymer P20 was coated on aluminum substrate, dried, hardened by heating and imaged using a CREO 3244

TRENDSETTER™ (column 11, lines 19-37). The wavelength of the CREO 3244 TRENDSETTER™ is not given but according to Van Damme et al. it is within the range of 700-1500nm (column 9, lines 50-59). The printing plate of Van Damme et al. meets the present limitations for the lithographic printing plate wherein the hardened hydrophilic binder meets the present limitations for the hydrophilic polymer, the infrared dye IR-2 meets the limitations for the light absorbing compound and the a tetramethylorthosilicate emulsion meets the limitations for the cross-linking agent.

b. It is clear from the teachings of Van Damme et al. that a hydrophilic phase and hydrophobic phase are present in the heat-sensitive layer taught therein. The heat sensitive layer is a hydrophilic layer containing the hardened hydrophilic binder. The cross-linking agent, added to the other components of the layer via an aqueous emulsion, forms the hydrophobic phase (Example 2). It is noted that the crosslinker of Van Damme et al. is not a polymer. However it is not clear if the hydrophobic phase of the present invention contains an actual polymer. See paragraph 7a.

c. According to the current specification, the gas which causes foaming is presumed to be generated when the polymerizable functional groups of the cross-linking agent contained in the hydrophobic polymer phase remain in the photosensitive layer, and these residual functional groups undergo a reaction or decomposition to thereby generate a gas (page 32, line 19 – page 33, line 31). Van Damme et al. is silent with respect to any gases or foam generated however the heat-sensitive layer of Van Damme et al. has the same components as the

photosensitive layer of the present application, specifically the cross-linking agent and the hydrophilic binder. Therefore the heat-sensitive layer of Van Damme et al. is expected to foam in the same manner as the present application.

Response to Arguments

8. Applicant's arguments filed August 9, 2004 have been fully considered but they are not persuasive.

a. Applicant amended independent claims 2 and 9 to include specifically state that the plate is without need of developing the unexposed areas of the photosensitive layer with a fountain solution during printing. Applicant argued the plate of Verschueren et al. still requires development. The Examiner respectfully disagrees. As pointed out in the rejection above, the plate of Verschueren et al. is processless and the plate is ready for printing without development (column 5, lines 1-9). Applicant continued to point to the teachings of EP 770 494 A in support of this argument. Again the teachings of EP 770 494 A are similar to Verschueren et al., however the plates are fundamentally different. The Example Applicant has cited does not comprise the thermoplastic particles of Verschueren et al., which is one of the components the Examiner has relied on for rejection. Additionally the present claims 2 and 9 are product-by-process claims. Applicant is reminded of MPEP 2113: "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process

claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe,* 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

b. With respect to the Arguments over Leon et al. and Van Damme et al., it is not clear if the photosensitive layer actually contains a hydrophobic polymer or just a hydrophobic phase. For Example, in lines 7-8 of claim 2, the photosensitive composition contains a hydrophilic polymer, a crosslinking agent and a light absorbing compound. In line 11, the hydrophobic polymer phase is mentioned. In the response filed August 9, 2004, at page 13. last paragraph the photosensitive composition is discussed and it is said a hydrophobic polymer is present therein. The crosslinking agents of Leon et al. and Van Damme et al. are clearly not polymers. Therefore if Applicant were to amend the claim so that it is clear a hydrophobic polymer is in the photosensitive composition, it is likely the rejections over Leon et al. and Van Damme et al. would be withdrawn.

Allowable Subject Matter

9. Claims 5, 17, 26, 34 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

a. There is no teaching or suggestion in Verschueren et al. (US 6,230,621 B1) to specifically use hydrophobic thermoplastic particles having a film forming temperature of not higher than 50° C as required in the present claims. The hydrophobic thermoplastic polymer particles of Verschueren et al. preferably have a coagulation temperature above 50° C. Coagulation may result from softening or melting of the thermoplastic polymer particles under heat (column 3, lines 1-31).

Conclusion

11. **THIS ACTION IS MADE** FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this **communication** or earlier communications from the examiner should be directed to Barbara L. Gilliam whose telephone

number is 571-272-1330. The examiner can normally be reached on Monday through Thursday, 8:00 AM - 5:30 PM.

a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

b. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barbara L. Gilliam

Barbara L. Gilliam
Primary Examiner
Art Unit 1752

bg
October 29, 2004